

COMMUNITY HEALTH SURVEYS

A Practical Guide for Health Workers

1. Planning and Organizing

Community Health Cell

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A Guide for Health Workers

Prepared for the International Epidemiological Association

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COMMUNITY HEALTH SURVEYS

A Practical Guide for Health Workers

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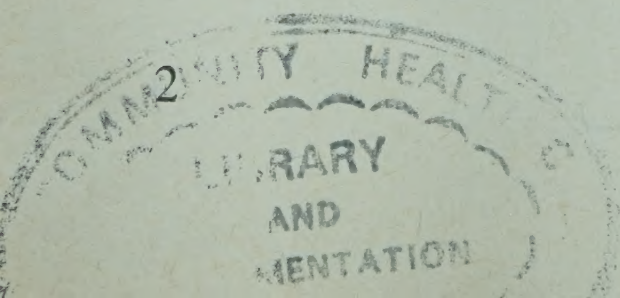
Number 3. Using Available Information

Number 4. Questionnaire Design

Number 5. Interviewing and Recording

Number 6. Presenting Survey Information.

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PLANNING AND ORGANIZING

A

HEALTH SURVEY

For whom :

1. *Doctors and health services personnel responsible for providing specific services at local level and who need more information so as to improve or develop health services in their local community.*
2. *Doctors and health services personnel responsible for planning, administering or providing services in larger administrative units and who in the course of their work require information that is not already available.*

Aims :

1. *To enumerate and define the stages involved in planning and organising investigations for the purpose of collecting information related to health needs within the local community.*
2. *To provide guidelines to meet the requirements of each planning stage.*

This booklet initiates a series of six handbooks giving guidance to the health worker, particularly at Primary Health Care Level, on how to gather information, how to handle and present it and how to use information in the daily management of health care. Areas covered will include health surveys, design of basic records and questionnaires, interview techniques, abstracting information, preparing simple reports and making statistics talk.

This booklet has been written as a guide to health service personnel when planning and conducting a survey for the purpose of gathering information about a community and its health problems, and when statistical assistance is not available. The need for good information and the means whereby good information can be obtained has been repeatedly expressed by the people concerned about health. "Surveys are fun" says the author; "but a well done survey which achieves its aims is more than just fun, it is making a very worthwhile contribution to the life and work of the community". A certain knowledge is necessary to do the survey well. This booklet serves the purpose of transferring this knowledge. It has been written to encourage health service workers of all kinds to undertake surveys when they are needed; for example, Dr Ashma, a young doctor in charge of a new Community Health Centre, in a rather remote and isolated area. Dr Ashma agreed to explain how he proceeded with planning and conducting the survey in his community. His example is described throughout the booklet on the right hand pages, while on the left hand pages some general principles on health surveys, drawn from his own experience, are given.

Dr. B. SKRINJAR-NERIMA, Chief; Development of Health Statistics, World Health Organization.

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Often, particularly when a local health problem becomes acute or a service requires re-organising or expansion, there is insufficient information available to make the best decisions. If the problems are very urgent, decisions will then have to be based on experience and on whatever information happens to be available. On the other hand, when health problems are persistent, recurrent or chronic or where inevitable re-organisation of a service is still some time in the future, a survey becomes possible and provides an invaluable means of obtaining information essential for reaching sound decisions. Frequently a survey is the only possible way of obtaining this information.

A survey is a study or investigation the purpose of which is to obtain more information on specific problems within a community or organisation.

Surveys most often concern people; what they do, how they live, how healthy they are, whether their diet and living conditions contribute directly to the commonly prevailing diseases and disabilities and hundreds of other possible enquiries. Some surveys are concerned with the functioning and running of institutions and services. In this case the 'units' or items on which information is needed may be the supply of antibiotics, or the number of beds occupied, the number of patients seen and treated for a particular disease and so on.

The basic procedures of a survey are simple and divide into two stages :

- (a) Firstly, selecting in an appropriate way a number of persons (or units if the survey is not concerned with people) who are to be questioned or observed. Examples of studies not directly involving people are surveys of contaminated wells or of cattle and sheep diseases.

- (b) Secondly, making a list of the most important questions or observations (facts) that are to be noted down on standard recording sheets (questionnaires) by the 'interviewer', i.e. person sent to speak to the selected people or to examine the units.

If these two stages are properly carried out in a scientific and careful manner then the survey will be successful. Doctors and other senior health service personnel should be encouraged to undertake surveys related to their own work and the community in which they are active.

The primary function of a survey is to provide information but it also has important secondary functions. It familiarises the survey organiser with local facts, conditions and attitudes as no other kind of study will do. Properly conducted, a survey gives the community an opportunity to meet the doctor or at least some of the health service personnel and so provides opportunities for the work of the health service or clinic to be explained within the community. A survey also provides unique opportunity for health service personnel to meet healthy people under normal home and working conditions, i.e. when they are not distressed or seeking help. A survey provides perspective between what is seen and treated at a clinic and what the real health or disease situation is in the community.

Surveys should be seen as a tool and as a method by which better health services can be provided at all levels. Survey methods need not remain the expertise of a few specialists but should become the tools of all senior health service personnel requiring information about the community they serve. To encourage this is the aim of these booklets.

'Planning and Organising a Health Survey' is the first of six booklets. The purpose of these booklets is to help doctors and health service personnel learn the skills required to obtain health information from a community. Each booklet is written as a self-instruction manual, and the subjects

covered will include :

1. Planning and Organising a Health Survey
2. Sampling
3. Using Information
4. Designing Questionnaires
5. Interviewing and Recording
6. Presenting Survey Information

The first booklet is primarily intended for use by personnel responsible for providing and administering health services. This personnel will require in the course of their work, additional information from their local community or from special groups within that community.

This information need not only be concerned with health, it can also cover social, demographic and other information.

Conducting (doing) a survey is often the only practical way of obtaining health information and other data. The plans for a health survey set out procedures for selecting a number of representative persons from the community or from a clearly defined group in the community. These selected persons are then asked about their knowledge, experience and opinions on health and related matters as required by the survey.

Health surveys are never identical in their purpose or scale. Nevertheless there is much similarity in the procedures required to obtain health information and in the organisation necessary to obtain it. This similarity allows the planning and the organising of a health survey to proceed systematically and in easily recognisable steps.

Surveys in general, including health surveys, develop in several stages; at each stage the survey organiser may require the assistance of other survey workers. Often these survey workers are other health service personnel and medical

students who have not had a training in survey methods. The five booklets, numbers two to six, provide simple self-training manuals for these survey workers. The principal investigator should read all six booklets **before** he starts on a health survey unless he is already experienced in survey work.

The text of this booklet is divided into two sections. The 'Guidelines for Health Surveys' are given on the left hand pages. These summarise important points to be remembered when planning a survey. They also set out in a logical and chronological order the main stages involved in planning a survey. The right hand pages illustrate by example the application of these survey guidelines. The 'Guidelines' are again divided into two columns; the left hand column gives the general principles underlying each stage of the survey. The right hand column lists typical questions and problems that arise in many surveys. These typical questions have arrows pointing to the corresponding section in the survey example where a similar question or problem is discussed.

Surveys are fun, they are hard work and sometimes they are exhausting. But a well done survey which achieves its aims is more than just fun; it is making a very worthwhile contribution to the life and work of the community.

It is our hope that this booklet will encourage health service workers of all kinds to undertake surveys when these are needed. It is also hoped that it will show how to do better surveys that provide better information for alleviating (lessening) the differing needs that face communities in all countries.

STAGE 1

Stage 1 : Recognise and Define Community Needs and Problems

General Principles

First the planner must clarify the aims and scope (extent) of the study by :

- (a) Clearly defining (setting out) the needs and the problems to be investigated.*
- (b) Clearly defining (describing) the aims of the survey and what is to be included and covered in the survey with regard to the community needs.*

Many surveys suffer from trying to get too much information on too many problems in a single study. This must be avoided at all costs.

A health survey is worthwhile only if the information will be used to deal with a need within a community. The information must be sufficiently important to justify the expense, the additional work for health service personnel and the time taken to carry out the survey.

With what problems do patients come to the clinic most often ?

Is the available information unrepresentative ? Why is it unrepresentative ?

Is there a plausible or likely explanation for the problems and needs of the community ?

The application of Stage 1 can be shown by considering Dr. Ashma's community.

Dr. Ashma is in charge of a new Community Health Centre. He came to this Health Centre two years ago after practicing for a short time in another part of the country. During his two years at the Centre he has heard complaints about the local water supply; some patients mention that the well water is unpleasant during the hot months.

From these complaints it is not clear to Dr. Ashma how extensive or severe the water shortage is and whether these complaints apply equally to all the thirty eight villages that come under the Health Centre. Dr. Ashma has noticed in both summers that during the hot months stomach and bowel upsets, mostly diarrhoea, increase greatly, especially amongst babies and young children. The full extent of illness is not known as only the most severe cases are coming for treatment at the Health Centre; patients from the more remote villages may not come at all unless their complaint is particularly distressing or severe. Often, when asked why they did not come sooner, patients mention the distance, the bad roads and the cost of being away from home.

Very likely the principal (main) cause of this increase in disease in the summer months is due to contamination of the food or water supply, possibly aggravated by poor hygiene when water is scarce. But before public health measures can be introduced it is important to determine which of these is the main cause, whether it is :

*Can the information collected
be used to solve the communi-
ty problem or need ?*

*Are the patients seen repre-
sentative of illness or health
in the community ?*

*Is there any reluctance to pro-
vide the information needed ?*



- (a) contaminated drinking water
- (b) poor methods of food preparation or of food storage
- (c) not enough water during the hot months for preparing the food, for cleaning domestic pots and dishes and for washing.

Or a combination of the above.





Dr Ashma is well aware that changing community habits and customs is not easy and attempts to do so will often be resented. For this reason he does not wish to introduce health measures that may upset the community until he is certain that these measures will substantially reduce the number of stomach upsets and diarrhoea in the summer.

Dr. Ashma also wishes to know much more about the health of the community in which he works. He has spoken to his patients about their health problems and also to the village headmen who, with the older men, are largely responsible for regulating village life. He feels however that he is getting an incomplete picture of the community's health. This is because he sees only the more severe cases and these patients give their own explanation, more related to traditional beliefs than scientific medicine, as to why they are ill. The Health Centre sees none of the healthy population and very few of the less ill and sees more of injury and less of internal illness; often patients come only after their own remedies or the village herbalists have failed to cure.



Dr. Ashma is unsure how far he can accept all the things the village headmen and the elders tell him; he feels they withhold some information because they lack confidence in the methods of the Health Centre and in the doctors and nurses. The Health Centre is associated in their minds with much that is foreign to their own traditions and they are torn between loyalty to their own customs and the help they feel can come from the Health Centre. Dr. Ashma is therefore keen to meet more people from the community,



*Is there enough social and
demographic information ?
What important information is
missing ?*



*What are the community's
priority needs ?*



to get to know them better. It is also important for the community to meet people from the Health Centre under normal conditions, i.e. when they are well and not needing treatment.

Dr. Ashma is aware that he knows very little about the community in which he is working apart from knowing there are 36 ordinary sized villages of about 200 people each and two larger villages, one with 1000 and the other with 1500 persons. He would like more demographic information, such as how many persons of each sex live in each village, their age structure, what kind of work they do and how many children most families have, and so on. More information is also needed about the social patterns in the community and about their diet and how this changes during the year. There is also very little information available on the environment, such as how many wells there are, where these are located and how usable the roads are during the rainy season and so on. All these factors affect the demands on the Health Centre and may prevent patients coming to the Health Centre; these factors also contribute to the spread of infectious disease in the community.

Dr. Ashma recognises three immediate community problems, namely the need to :

- (a) reduce by public health measures the number of persons suffering from stomach illnesses and diarrhoea, especially during the summer months. To decide what these public health measures are to be and the resources required to carry out these health measures.
- (b) improve the water supply. This will reduce pollution, increase the water supply in the homes and ease the burden of water carrying for many village women.
- (c) improve roads as far as practicable so that patients can come to the Health Centre more easily at all times of the year.

STAGE 2

Stage 2 Decide upon the Information Requirements :

- (a) *What information is required to deal with the community needs and problems ?*
- (b) *What information is needed for proposing a solution or for allocating resources to the health and community needs ?*

Even at this early stage it is important to make a list of the most important topics on which information is required. Each of these main topics will have information sub-sections such as Diet :

- (a) *Protein foods*
- (b) *Corn and carbohydrates*
- (c) *Seasonal variation in diet*

OR

Housing :

- (a) *type of house, material and structure*
- (b) *number of families/persons living there*
- (c) *number of rooms/area/toilet and cooking facilities.*

It is most important to do this simple listing of the main categories of information at this stage and to revise it several times as planning progresses.


Making lists such as this will remind the planner at all stages what he is setting out to achieve and what he needs to do to ensure successs for his survey.

How many questions can be asked during the survey and how much detail is needed to solve the community problem ?

What are the most basic (important) questions to be asked ?

Dr. Ashma feels he must do a survey to get the information he wants. This survey will need to :

- (a) Determine (count or estimate) the number and the kind of stomach disorders and diarrhoea in the community, especially amongst younger children.
- (b) Obtain evidence whether there is :
 - (i) a polluted and inadequate water supply;
 - (ii) an inadequate diet;
 - (iii) poor food handling (i.e. inadequate preparation of food and improper food storage).
- (c) Establish whether there is a connection between :
 - (i) stomach disorders and diarrhoea as observed in this community
 - AND**
 - (ii) polluted water, diet and poor food handling.
- (d) Obtain information on the problems people have in coming to the Health Centre.
- (e) Obtain some demographic information on the size, sex and age structure of the community served by the Health Centre.



This is a very long list of information requirements. Dr. Ashma recognises that he cannot collect all this information in great detail. He makes a note that when he comes to design his questionnaires he will be very strict and will cut out all but the most important and directly relevant questions.

STAGE 3

Stage 3

Find out whether the required information is already available

It is important to make enquiries whether the information required is not already available elsewhere, either at other health centres, or from central government or possibly from the University. This can usually be done by :

(a) *discussing the community needs and the information required with other administrators and health personnel at both local and higher administrative levels;*

Have you checked on existing and available information with:

- (i) medical colleagues;*
- (ii) government offices;*
- (iii) institutes of higher education ?*


(b) *making enquiries whether any books or published reports deal with a similar need in other communities, at regional or at national level.*

Does the information needed depend on unique or special local factors ?


If the principal investigator finds that the information obtained from his discussions and reading applies also to his local situation then he must come to one of two conclusions. Either :

(1) *a survey is not necessary at all and that the information obtained is now sufficient to deal with the community health need;*

OR



Dr. Ashma's discussions with associates and his reading about similar problems elsewhere shows that little is known about diet and the way food is prepared and cooked in his region.



The degree of water pollution must be determined separately for each village because pollution depends on local factors such as soil conditions and the closeness of the wells to houses and animals. It is also important to Dr. Ashma to know how much help can be expected from the villagers themselves if new wells are required or if the roads are to be improved.

For all these reasons available information is of little help to Dr. Ashma and he decides a community survey is necessary.

- (2) *only a smaller and more limited survey is required. This survey will obtain information on only those aspects not covered by the available information. Experience shows that a survey will often be required because the available information is not entirely adequate.*

STAGE 4

Stage 4 Can the survey succeed ?

Decide whether :

- (a) a survey can get the required information;
- (b) the information will still be useful some time after it is collected and reported;
- (c) resources are available for a survey.

Planning a small survey is always interesting and not usually difficult. The planning may however overlook some important facts or some conditions that will adversely affect the results. This can be made less likely if planning is done systematically, i.e. carefully step by step.

Can specimens or samples of materials be collected for laboratory examination ?

This is best done by clearly outlining the different steps of the survey and making sure that each step can be carried out in the way the investigator has planned.


Consider the staff, time and expenses required.

A survey always takes time and requires staff. For small surveys, existing clinic and health centre staff can often do the survey work themselves but it will be an 'extra' load over and above their usual duties. Also there will be the cost of office paper and of the questionnaires and other expenses associated with travelling and with meals whilst interviewing away from home and so on.


How long will it take to do the survey ?

Most surveys, even small local surveys, take several months to prepare for, and require several months and sometimes a

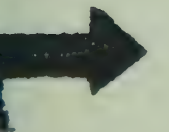
Will the information still be useful by the time is collected and reported upon ?



After thinking about it, Dr. Ashma is sure the information he wants can be collected during a survey. Most of the information about the wells and the roads can be obtained by noting the conditions at the time of the visit and by taking a sample bottle of water from the wells. The other information relates to food and cooking; families are willing to talk about these things. Information about sickness is more difficult because this relies on peoples' memory and also because people are sometimes unwilling to discuss sickness. This reticence (unwillingness to discuss) can be overcome if the interviewers are skilful and explain why they want to know.




The survey will take time to complete, in this case about 18 months. Making proper preparations for the survey will take a few months. Visiting villages takes a long time with the few interviewers Dr. Ashma has. Visiting should continue over a whole year so that villages can be visited in hot as well as during the cooler months. After that, the results (answers) from the survey will have to be sorted and studied and that too will take several months.




Dr. Ashma is surprised how long the survey will take but he realises it is something he will have to accept. It just cannot be done more quickly. The information will be very useful to the Health Centre even if it takes two years to get; conditions in the villages do not change quickly and the information will help planning his services for many years.

*year or more to do the field work (visiting and interviewing).
Then the results have to be analysed (studied) and the
results and conclusions written as a report. Who can do the visiting and
Few surveys can be done interviewing ?
in less than six months,
most take a year or more.*

*At this early planning stage these survey requirements
need not be considered in full detail, but just sufficiently
outlined to be sure that all the main planning decisions
can be carried out and are not forgotten.*



Getting interviewers is a problem. However the nurses at the clinic already visit patients in the village and they are familiar to some degree with village conditions. If their duties at the Health Centre can be re-arranged these nurses can do the survey interviewing. They will need some training because none of them have done survey work before.



STAGE 5

Stage 5 The First Planning Decisions :

- (a) *List the main questions the survey is to answer and who in the community can answer these questions.*
- (b) *Outline the methods (sampling plan) needed to select the people and places to be visited in order to collect the survey information.*
- (c) *Decide on the time needed to complete the 'field work', i.e. for doing all the visiting and interviewing.*

To carry out a successful survey the following conditions must be satisfied.

- (i) *A sufficient number of people in the community must have the knowledge and personal experience to answer the questions asked in the survey. It is necessary that these people can be identified (recognised). For example, it is not sensible to ask technical questions of farm workers or to ask wives what their husbands earn or town people about farming. These persons are unlikely to have the experience or knowledge to answer such questions.*
Who is the most important person to interview ?
- (ii) *It must be possible to locate (find) and to go to (speak to or visit) enough people in the community who have this knowledge and experience. For instance, if the survey is to find out how families manage with a handicapped child or relative and what special problems these families have, then it is essential to devise some way of identifying (finding) and visiting families with handicapped persons. The booklet on 'Simple Survey Sampling' will give guidance and rules by which a representative group of*
What kind of person will make the best interviewers for this survey ?

Dr. Ashma is giving a lot of thought on how best to get the survey information. To help clarify his ideas and to help him remember what is required, he makes notes on these problems as follows :

- (a) The mother of the family can give information on recent stomach illness and diarrhoea, on the number of persons in the household and she can answer dietary questions. Mothers can also answer most of the questions about the ages of the family but the age of persons over 50 will sometimes need to be answered by that person himself. Mothers can also answer questions on food preparation, food storage and the water supply for household and washing purposes, the distance from wells and other difficulties.

Conclusions : Individual homes must be visited so that the interviewers can speak individually to the mothers of the village families. This will also provide opportunities for observing the preparation, cooking and storage of food and other conditions in the home. The interviewers for this survey must be women for three reasons :

- (i) village mothers are much more likely to speak openly to a woman interviewer.
- (ii) in some villages custom will not allow men to speak to women alone on domestic matters.
- (iii) women interviewers are more experienced in child care, cooking, food preparation and domestic matters and will for this reason be much more observant of conditions in the home.

persons from the community can be selected.

(iii) Individuals must be willing to give the information asked for and must be willing to talk about their experience to the survey workers. This is most important as people are sometimes reluctant to discuss certain subjects and problems with persons outside their own family.

(iv) There is someone at the local level (very often the local doctor) who is able and willing to spare the time to organise and supervise a survey from its early planning to the collection of information and final report. This includes checking that replies have been received from all the people in the survey.

What information should be noted and collected by direct observation and not by interview?

What information requires laboratory testing or other kinds of examination?

Are certain kinds of information best obtained by speaking to specialists or to persons in authority.





Before going on the next stage it is important to check and revise the lists of required information made at Stage 2.

- (b) Information on the village wells, water level, the closeness of the wells to the houses, refuse and animals and other polluting factors will be noted by direct observation by the interviewers. Interviewers do not need to ask these questions, but they will have to visit the wells each time they visit the village and make notes on each well at each visit.
- (c) Information on bacteria and other impurities is best obtained by sending samples of well water for chemical analysis. The Health Centre does not possess water testing equipment but the samples of water can be sent to the government laboratories.






Conclusions : Women interviewers can visit the wells and note down the conditions they see. They can also be provided with proper bottles and labels for taking water samples which will then be sent to the laboratory.

- (d) Information on general environmental conditions, in particular the conditions of the roads leading to the Health Centre can best be obtained by having a meeting with the village headmen and elders. Such a meeting need only be arranged once but there are several advantages in having two meetings. The first meeting should be just before the investigators visit the village for the first time. This will provide an opportunity to explain to the village elders about the survey, what its aims are and how it will be carried out, **to ask for their help and co-operation** and also to ask about road conditions. A second meeting, at the end of the survey, will give another opportunity to meet the village elders, listen to their opinions and their needs, to thank them for their help. At this second visit it is also possible to tell them more about the Health Clinic and to ask whether the village men are willing to help in any work needed to improve the wells and the roads.





Dr. Ashma has no money to pay for interviewers. However, there are three Health Centre nurses who some-





What resources from the Health Centre are available for doing the survey ? What re-arrangement of work is necessary to allow some staff to work for the survey ?



Will conditions change during the time of the survey ? How will this be taken care of ?



How many interviews can a single interviewer do in a day or a week ?



times visit patients in their homes. At any one time one of these can be spared. It is possible for these nurses to take turns to interview for the survey, always for one week (5 days). During the university holidays a female medical student may be able to help; this has to be checked.

During the year there will be seasonal changes in diet, in the conditions at the wells and in the frequency of diarrhoea. For this reason the survey field work must continue for exactly twelve months.

To determine how many families and villages can be included in this survey Dr. Ashma must also know :

- (a) how long does it take an interviewer to speak to one family and also to visit and report on all the wells in that village ?
- (b) how long it takes to travel to the next village or back to the Health Centre with the transport given to the interviewer.

For his community, Dr. Ashma thinks only one village can be visited by an interviewer in one day. Also the interviewer should arrive when the main meal is being prepared. This also limits the interviewer to a single family in a day.

With only one interviewer available each working day, it will only be possible to visit about 21 or 22 families each month. If one of the other Health Centre nurses can also do a few visits each month in each of the two largest villages then altogether 25 families can be interviewed each month.

STAGE 6

Stage 6 Who is to be interviewed ?

Decide on the final sampling plan :

- (a) *How are the people in the survey to be selected ?*
- (b) *How many are to be included ?*
- (c) *What arrangements are needed to get the interviewers to the respondents (the people to be interviewed)?*

This part of a survey needs careful planning. An incorrect method of sampling (selecting) people to be interviewed (visited and spoken to) can lead to very poor and misleading survey results. A survey is to provide information on the real conditions existing in a community. This can only happen if all parts and all sections of the community have an equal (similar) chance of being visited and questioned. All types of persons, rich and poor, sick and healthy, old and young, should be included (represented) in the survey sample in the same proportion (concentration) as are to be found in the whole community.

How many villages can be included in the survey ?

The interviewers must not be allowed to choose whom they will visit; the survey plans must show who is included and who is to be visited before the interviewing begins.

A full discussion on how to select the survey sample will be given in the booklet on 'Simple Survey Sampling'.

What are the rules by which some villages are included and some excluded from the survey ?



Dr. Ashma realises he cannot send interviewers to all the villages. There are not enough staff to visit more than a small number of families. Because of seasonal changes in the number of cases of diarrhoea it is necessary for interviewers to visit families throughout the year.

The two large villages are clearly important to the community as a whole, both socially and in terms of health services. For this reason it is decided that the two larger villages must be included. Dr. Ashma is willing to take only a random sample from the remaining 36 smaller villages. He proceeds to evolve (develop) his sampling plan as follows :

Step 1 : (a) He lists the names of all the 36 smaller villages.

(b) At random (by a chance method) he draws 18, i.e. half of the village names, from this list. These 18 villages are included in the survey, the other 18 are not.

(c) He lists the names of all the village headmen or leaders and all the wells of the 18 villages included in the survey. He also lists the wells of the two larger villages.

Note :

A simple way to select names 'at random' is to write each name on a separate piece of paper and put them all in a pot or jar. Shake and mix them well. Let someone else take out one slip of paper at a time until there are as many as are needed. The names on the papers drawn out are included in the survey, the others are not.

The meaning of 'random' is more fully explained in the booklet 'Simple Survey Sampling'.

How is the interviewing to be spread over the period of the survey ?

What is the final sample size, i.e. the number of persons to be visited ?

- (d) He now needs a list of all the families living in each of the 18 smaller villages in the survey as well as all the families in the two large villages. The list of families must include enough information for the interviewer to find any family in the survey villages. Dr. Ashma decides to visit each headman of the survey villages to prepare them for someone coming to make a list of families. Making this list is a lot of work but with the help of his secretary he can manage.

Step 2 : (a) Each month from each of the 18 smaller survey villages one family is chosen at random and will be visited that month. If the chosen family has already been visited in an earlier month it is not visited again but another family from that village is chosen at random in its place.

- (b) Because of their size and importance Dr. Ashma feels it is necessary to select three families at random each month from each of the two large villages.

By this sampling plan, 24 different families are visited every month. Only one half of the smaller villages are included but both larger villages, including the one with the Health Centre, are in the survey. The total sample size for this survey, over the whole year is 288 families.

The names of the villages and of the families to be visited that month are given to the interviewers with strict instructions that only these families are to be visited.

STAGE 7

Stage 7 What will the survey cost ? :

- (a) Estimate (calculate) the survey costs in terms of staff, transport and other requirements.
- (b) Check what staff, transport and other help is available locally.

To avoid running out of resources during a survey it is essential to estimate the number of staff, money and other things needed for the study.

Cost depends upon several factors such as the number of persons included in the survey and the time required to locate (find) the persons visited in the survey. It is not always easy to find where a family lives and sometimes the person wanted is not at home. The time spent talking to each person in the survey can take between a few minutes and a few hours, depending on the survey. For smaller surveys local health service personnel may be sufficient but for larger surveys additional and paid assistants are required.

Is transport required ? Will public transport (i.e. buses and trains) be adequate ?

What are the main items of cost in the survey ?

The principal steps in costing a survey are :

- (a) estimate the number of interviews one interviewer can do in a day or a week. This is best done by doing a few trial (test) interviews and noting how long it takes to do everything that is required.
- (b) estimate the sample size the study requires. The 'sample size' is the number of persons to be visited or cases that are to be examined. This depends on the kind of survey that is being done. Sample size guidelines will be given in the booklet 'Simple Survey Sampling'. As a rule most surveys will include more than 50 interviews.

To decide on costs Dr. Ashma must know how long it takes to visit a family, how long it takes to speak to them and complete the interview and to visit the village wells and take samples of water. It is not known how long all this takes, but he thinks it will take between one to two hours, not including travelling time between villages. On most days interviewers will have to use the local buses to get to the villages. The Health Centre car will be available for two days in the week and can be used to get to the more distant villages and to those villages without a nearby bus service. Bearing in mind that the interviewer must arrive just before midday when the main meal is being prepared it is clear that an interviewer can each day visit only one village and interview only one family.

Dr. Ashma now sets out his costs as follows :

| Item | Costs |
|---|---|
| (a) Interviewer wages | None; all his interviewers are Health Centre staff. |
| (b) Part-time help | A sum to pay for one student for several weeks. |
| (c) Secretarial money for typing questionnaire and report | A small amount only as most of the typing can be done as part of normal office work. |
| (d) Transport | Cost of petrol and a sum for repairs if the car breaks down. |
| (e) Analysis of well water samples | A small sum for posting the samples and for the cost of the bottles. The Government laboratories have agreed to do the water analysis free. |

- (c) *Decide on how many weeks in which the field work must be completed.*

From (a), (b) and (c) it is possible to calculate the number of interviewers required.

Other resources and expenses must not be forgotten. For most large surveys these costs will include :

- (a) *wages of staff, mainly interviewers and perhaps secretarial support;*

- (b) *cost of transport and travel from one interview to the next;*

- (c) *expenses for the interviewers during the day and for sleeping away from home. (In some surveys interviewers cannot return home every day);*

Has allowance been made for unexpected expenses ?

- (d) *cost of preparing the questionnaires (paper, stencils); also the cost of printing if this is done;*

Can these expenses be met from the Institute's own resources ?

- (e) *cost of sorting and analysing the questionnaires after the field work is completed. This can be an expensive item for some larger studies.*

- | | |
|-----------------------|---|
| (f) Office stationery | Cost of paper and stencils for the questionnaires and report. |
| (g) Postal expenses | Cost of envelopes, postage and other expenses associated with distributing the report; decide how many copies of the report are to be sent out. |
| (h) Other expenses | A small sum for unexpected expenses. |

All these expenses cannot be met from Health Centre funds and Dr. Ashma will apply for a small grant from the District Health Authorities. As these Authorities are also interested in the result of the survey he feels he has a good chance of getting support. However the study will not start until he has been given the money needed.



STAGE 8

Stage 8

Make the final decisions on the survey, including a final decision on :

- (a) the essential information to be collected
- (b) the scale of the survey.

A survey can easily become too large, too costly and too complicated.

The next step in the preparation of a survey is to make sure that it can be carried out with the available resources (staff, transport and money). A survey is wasted if the resources are not enough to finish the study. Information collected up to the time the resources run out is usually not representative of the community as a whole. This may give quite misleading results.

What geographical area should the survey cover ?

It is much better to do a smaller study than it is to start a big survey for which staff and money is short.

A survey should not be started unless there are enough resources available.

For many small surveys extra staff is not required.

But even for small surveys some extra money is always needed. If support can be obtained from a Health Centre or Clinic then it need not be very much.

Should the subjects studied be limited ?

*How much detail is required ?
Will less precise information be sufficient for dealing with the needs of the community ?
Does all the information collected help to make decisions about needs ? If not, can parts be dropped from the study ?*

It is easy to over-extend the scope and aims of a study and for this reason Dr. Ashma is restricting his survey in two ways :

- (i) **Geographical restrictions.** For practical purposes the health needs studied must be restricted to the local community of thirty-eight villages. This is so for two reasons. First, the doctor and the local administrators have no authority outside their own community. Second, to extend the survey beyond his own community will make the survey much more difficult and cause delay.

- (ii) **Restrictions on the number of diseases and ages of patients.** Confining (restricting) the illnesses studied to stomach disorders and diarrhoea in young children will make the survey simpler. No other diseases will be studied during this survey. This restriction will still meet the aims of the survey. For planning Health Centre services, it is enough to know the number of males and females in very broad age groups; exact ages are not required. Many older people do not know their precise age and it would take too long to find out.

STAGE 9

Prepare the Questionnaires

How many questionnaires are required ?

Decide on how many different questionnaires are needed and what the purpose is of each questionnaire.

Each topic (subject) on which information is required should be covered by a number of short, clear and easily understood questions before going on to the next topic. The process of designing (writing) questions and how the questionnaire should be arranged is more fully described in the booklet 'Designing Questionnaires'.

Are there any topics the respondents will be reluctant to talk about ?

For Dr. Ashma's study three separate questionnaires are needed. These are :

- (i) A questionnaire for interviewing mothers.
- (ii) A questionnaire for observing (noting) and writing down the conditions seen in the home.
- (iii) A questionnaire for observing the conditions found at the village wells.

The questionnaire for interviewing the mothers deals with information on several topics such as illness and nutrition. For this questionnaire the easiest and most familiar questions are on the water supply in the home and these could come first, followed by questions on food and nutrition. These are then followed by questions on the number of persons in the home and their ages and finally by the most difficult part, questions on illness. In many cultures, people are reluctant (do not want) to discuss illness or family misfortunes.

Here are a few simple but important rules.

(a) Every questionnaire must include information on :

- (i) *name of village or address;*
- (ii) *name of family or person interviewed;*
- (iii) *date of interview.*

Identification is usually put at the beginning of the questionnaire.

Does the form contain adequate identification so that an interviewer could find and visit this family again ?

(b) *Questions must be short and easily understood.*

Keep the questions simple.

Are there reminders to the interviewers how to start the questions in the different sections ?

(c) *Only important questions should be asked. Keep the questionnaire as short as possible.*

Is there enough space for :
(i) *circling or ticking the right answers ?*
(ii) *writing in information by hand ?*

(d) *Start the questionnaire with questions that are easy to answer and which deal with very familiar matters.*

Is there sufficient space between questions so that the forms are easily read and filled in by the interviewer ?

(e) *Leave plenty of space for the interviewer to write down the answers and to make notes of anything interesting she sees. If writing space is short then*

the handwriting will become cramped and very difficult to read.

Example of a Complete Questionnaire

Family Interview Questionnaire – Page 1

Name of Village TASHIRA

Name of Family STENSAIR

Date of Visit 26/10

Whom did you speak to ? Mother/Wife
Oldest daughter
Grandmother
Someone else ?
Who was this ?

You are visiting village families to find out if they are satisfied with the water they get for cooking and washing.

1. How many women from this family usually go to carry/get water each day ?
 - 1 Usually **one** woman only
 2. **Two** women
 3. More than two women
2. At what time of day do they go for water ?
(circle **all** times which apply)
 - 1 Morning
 2. During the day
 3. Evening
3. Are you far from the well you use ?
 1. Very far
 2. Not very far
 3. Close to
4. Are the women very tired when they get back with the water ?
 1. Very tired
 - 2 A little tired
 3. Not tired at all

(f) Put the questions in a logical order, *i.e.* group together questions on a similar topic or theme. This helps the respondent (the person being interviewed) to understand what information is required.

Great care must be taken in developing a good questionnaire. Preparing a satisfactory questionnaire may take several weeks. Start preparing the questionnaire early, if possible several months before the field work begins.

Are the questions in logical order ?

The first two pages of Dr. Ashma's questionnaire deal with three different aspects of water supply and these are grouped together in the questionnaire.

(i) Questions 1 to 4

ask about the effort and difficulty of getting water.

(ii) Questions 5 to 7

ask how satisfied the family is with the water.

(iii) Questions 8 and 9

enquire whether there are times of special difficulty.

Page 2

5. Does this well provide enough water for all the year ?
1. No, never
 2. Most times, but not always
 3. Always enough water
6. Is the water clean enough for cooking ?
1. Yes, always
 2. Yes, usually/mostly
 3. No, hardly ever/not at all
7. Does the water taste good ?
1. Yes, always a good taste
 2. Yes, a good taste most of the time
 3. No, usually/always a bad taste
8. Are they any **special** times in the year when you are **not** pleased with the well
1. No, always pleased
 2. Yes, sometimes displeased
 3. Yes, always displeased
9. When are these ?

Time of year when dissatisfied

1. *Early...summer...just*
2. *after the rains....*
3. *.....*

Stage 10 Prepare the Interviewer Instructions

After the questionnaires are ready, short written instructions must be prepared for the interviewers. These instructions will also be used during the training of the interviewers before the survey starts. These instructions serve three main purposes :

- (a) To explain carefully the importance of getting to the sample of persons selected for interviewing.

In every survey there are always some special features that need emphasising such as what to do if the person is not at home or has moved away or does not speak the same language as the interviewer or refuses to speak to the interviewer and so on.

- (b) To explain how to use the questionnaires during an interview, so as to encourage respondents to co-operate in the study.

- (c) To serve as a reference which interviewers can use when difficulties arise.

Quite often there are language difficulties and the interviewers' instructions must explain how this is to be dealt with.

In some communities several languages may be spoken. Respondents may not always speak the same language as the

interviewer or speak it so poorly that misunderstandings occur. This problem is usually overcome in one of two ways :

Have the interviewers been properly instructed how to begin an interview ?

- (i) Send two interviewers together who between them are fluent in the different languages spoken in the community.

Dr. Ashma is aware of the importance that the interviewers should introduce themselves properly to the family and explain simply and briefly why they have come to see the family. The interviewers must also ask if they can come in and watch the preparation of the meals and also if they can put some questions to the family. This is so important that Dr. Ashma uses the first two pages of the Interview Instructions to explain this. To make those instructions particularly clear, he has set these instructions out in simple steps as follows :



STAGE 10

(ii) *Instruct the interviewer to ascertain the respondent's language and to arrange for another interviewer speaking this language to visit on another day. The first interviewer should try to get someone living nearby to explain to the respondent that someone speaking their language will visit them in a day or two.*

Do the respondents know why they are being visited and interviewed ?

Have the interviewers been instructed to explain to the respondents the purpose of the study ?

Is the place and time of the interview important ? If yes, have the interviewers been told ? Have they been told how to arrange this ?

Preparing the questionnaires and the interviewer instructions must be done even if only one interviewer is working on the survey. Instructions become even more important for bigger studies.

Have respondents been assured that the answers given will be confidential and will not be shown to anyone else ?

Interviewer Instructions

Step 1. When you have found the house or family to be visited, give the usual greetings. Start the conversation as is usual in this community by saying you have heard well of this family, that people speak highly of them and that you too wish the pleasure of meeting them. Then go on to remark on some local feature such as the happy children you see, or comment on the nicely kept fields nearby or on the lack of rain or similar suitable comments. When easy conversation has been established, usually after about five minutes, start explaining the purpose of your visit.

Step 2. Ask whether they have heard that Dr. Ashma of the Health Centre has visited and spoken to the village headman (mention the name of this headman). Dr. Ashma has said that he has had some patients at the Health Centre from this village and wishes to know more about the people. Some patients from other villages have complained that water is scarce in their part and that it is not always clean; some of these patients have had to come a long way to get to the Health Centre. Let them know that you are from this Health Centre and are working for Dr. Ashma.

Step 3. Ask whether you can talk to them about these matters concerning their village and can you please come into their house to discuss these problems and to see if they and other people in the village have the same difficulties. Say that as it is near the middle of the day you do not wish to hold back or disturb the preparation of their cooking. You would be especially pleased if they can let you come in, sit down and talk to them whilst they continue with their usual meal preparations. Explain that whilst they are cooking you will be asking some simple questions. Also that you will be making a few notes so that you will not forget what they tell you. Stress that these notes are only a help for your own memory and will not be shown to anyone else.

STAGE 11

Stage 11 Prepare the Community for the survey :

- (i) *Let people in authority know what is planned and get their agreement and co-operation. Explain the purpose of the study to them.*
- (ii) *Prepare the community or institution for the coming survey.*

The people who must be kept informed are :

- (i) *the next senior level of Health and Government officials;*
- (ii) *the local health and administrative personnel in the community or the management if the survey is in an institution;*
- (iii) *the people who are to be surveyed or their local representatives;* *What is the best way of approaching the people to be interviewed ?*
- (iv) *the staff and collaborators who will actually carry out the survey.*

Not all these groups of people need the same kind or the same amount of information, but all of them should be aware of what is being done.

To obtain full co-operation and support for a survey from senior authorities requires that they should know in good time and certainly before the field work begins :

- (i) *that a survey is planned, when it will start and how long it will take;*
- (ii) *the aims and purpose of the study and who will be sent a copy of the final report and of the conclusions drawn from the study results.*
- (iii) *the cost of the study and whether they will be asked to help finance (meet) these costs.*

Dr. Ashma knows that an interviewer unexpectedly arriving at a village and asking lots of questions may make people suspicious and unfriendly. To avoid this he decides to:

- (a) Have a meeting with the village elders before the start of the survey.

At this meeting he will :

- (i) tell the village elders about the survey and the health problems he wishes to improve;
 - (ii) ask these elders for their support and ask them also to please let the families of the village know of the survey and that a nurse from the Health Centre will come to visit and talk to a few of these families.
- (b) Have only women interviewers because nearly all the questioning will be with the mothers during meal preparation time.

Dr. Ashma had previously, whilst enquiring whether the information he requires is already known (as described in Stage 3), told his district medical authorities of his plans and had obtained their approval. He again reminds these health authorities of the survey when he asks for some funds for the survey and for support from the government laboratories to analyse samples of well water.

To obtain the full co-operation of the community or of the institution being studied, requires that the people concerned should know :

- (i) that a study is being done and that some of them may be interviewed;*
- (ii) the purpose of the study; they do not need to know this in great detail;*
- (iii) how the study can benefit them, their community or institution;*
- (iv) that the information they give during the interview is completely confidential and will not be shown to anyone else.*

Notes

STAGE 12

Stage 12 Testing the Survey Methods :

- (i) *Test the questions and questionnaires;*
- (ii) *If possible, do a small pilot study.*

Before sending out the interviewers; test the questionnaire on a few friends and a few villagers.

This always shows up some questions which need to be worded differently. This preliminary testing (called a pilot study) may reveal :

- (a) *confusing and easily misunderstood questions. Re-word the questions to make their meaning clear.*

Have the questionnaires been tested by a few colleagues ?

Have their comments on questionnaires been used so as to :

- (i) *Improve clarity ?*
- (ii) *Remove ambiguity ?*
- (iii) *Improve the question order ?*
- (iv) *Remove unnecessary questions ?*

- (b) *whether enough space for answers has been left.*

- (c) *whether respondents (the persons being interviewed) object to some questions or avoid giving a*

*It a pilot study possible ?
Where can the pilot study be done ?*

clear answer. Try wording the question differently, putting it later in the interview, or remove it altogether.

- (d) *whether some questions ask for information about which most respondents are ignorant or have no personal experience.*

How large should the pilot study be ? Who is to do the pilot study ?

The questionnaires are tested in several stages. First Dr. Ashma asks several of his women staff to fill in the questionnaire and he also asks the wives of some of his friends. Although these respondents are more highly educated than the villagers for whom the questionnaires are meant, it does reveal (show) several questions that are poorly worded and a few that are not clear; a few changes in the order of some of the questions is also necessary. Having made these changes to the questionnaires, Dr. Ashma now speaks to his most experienced nurse who is going to be put in charge of interviewing. The first thing he does is to explain to her the purpose of this survey and to explain the interviewer instructions.

In order to do a small pilot study one of the nearby villages **that is not to be included in the survey** is chosen. Dr. Ashma visits its headman and gets his agreement for his nurse to visit some of the families in this village. To make this pilot study as realistic as possible, i.e. similar to the methods to be used in the full survey, Dr. Ashma lists all the families with the help of the headman and at random chooses 10 of these families. His nurse is asked to visit one of these families each day and to interview them. The nurse carefully notes

Remove such questions as they will not get the information required.

How long does it take to interview ? Keep a record of the time taken during test interviews.

(e) the time it takes for an interview to be completed.

Respondents become tired and dis-interested (bored) if the questionnaire is too long or if they do not understand

Are changes necessary in the survey plans as a result of the pilot study ?

it. If the pilot study shows this to be the case, shorten the questionnaire by taking out some of the less important questions.

The questionnaire is the best means of getting the information wanted. If the questionnaire is not properly designed it will not collect the right

Are the pilot study interviews to be excluded from the survey results ?

information and many more respondents will give incorrect answers. The whole survey can be ruined (spoilt) by using poorly designed questionnaires.

the time it takes her to find each family, the time it takes to complete the interview and the time it takes to fill in the questionnaire about the conditions at the well on that day. At the end of these ten interviews Dr. Ashma has a lengthy discussion with the nurse about her experience, the difficulties she has met and so on. As a result some more changes are made to the questionnaire and some questions are left out altogether to make the interview shorter and also because the respondents are not able to give clear answer to two of the questions. Some changes are also made to the interviewer instructions; more explanations are included on how to locate (find) the families in the village and also something is added on how the interviewer should end the interview and how she is to take her leave from the family.

Dr. Ashma decides not to use these ten questionnaires from the pilot study in the full survey report. He feels that the changes to the questionnaire and the inexperience of the interviewer at the pilot study stage will make the answers less reliable and less comparable to the later questionnaires from the proper study. He does not tell the headman this as it would offend him to find out that he and his village families have taken so much trouble and in the end their answers are not included. Dr. Ashma knows he has to be very discreet about this.

STAGE 13

Stage 13 Train the Interviewers

Training the interviewers is the last stage before the field work begins. This training will consist of :

- (a) Explaining to the interviewers the aims of the survey and its scope at a level they can understand.

What arrangements have been made for training the interviewers ?

Interviewers may meet some unusual situations and they can deal with these much better if they understand the purpose of the study.

Also their interest in their work will be increased if they know why they are interviewing.

Do interviewers fully understand the importance of sticking to their sampling instructions ?

- (b) Explaining the written instructions they have received about which people to interview and how to find them.

Interviewers are unlikely to follow their instructions if they do not understand how important they are.

Have the interviewers been told to write down things that are relevant to the study ? Have they been given examples of what is relevant to the survey ?

- (c) Going through the questionnaire, question by question, with the interviewers. Give interviewers some practice by getting them to use the question-

Have the trainees been told how to ask and emphasise the questions ?

Do they understand that they must put the questions as they are printed on the questionnaire and that they must not change the wording ?

Dr. Ashma and the senior nurse who did the pilot study will share the two day training sessions between them. This training is for the other three nurses who will do the survey visiting and interviewing. The female medical student who will help in the university holidays cannot come to this training but the senior nurse will see to her training later.

The training starts with Dr. Ashma explaining the reasons for the survey and why he needs this information. He also tells them that he has seen the village headmen and that they are only able to visit a sample of the villages in the Health Centre district.

He next tells them about the need to visit only those families whose names they are given and about the wells and water supply. He asks them to note down anything of interest relating to health, hygiene and food as well as the condition of the road and bus service they use. They are to note these things even when there are no questions in the questionnaire about some of these matters.

The senior nurse then takes over and emphasises the importance of starting the interview properly and on friendly terms with the respondents; she illustrates this by telling of her own experience when interviewing on the pilot study. Her next step is to discuss all the questions in the questionnaire and how these are to be put and emphasised. She then tells them that for practice they are to 'interview' each other whilst Dr. Ashma and herself will listen and make some comments on how well they are doing this mock (play) interviewing.

naire on each other
(if there is more than
one interviewer) and
on other members of
the survey team or

Can a few practice interviews
be arranged for the trainees ?

the Health Clinic personnel. This will familiarise the interviewers with the questionnaires and make it less likely that they will ask the questions in a different way than is intended. More will be said about interviewer training in the booklet 'Interviewing and Recording'.


- (d) Giving advice to interviewers on how to deal with situations that often occur during the field work.

Have the interviewers been given a short list of typical questions respondents are likely to ask them ? Have they been given guidance (help) for answering these questions ?


This includes what to do if a respondent

refuses to co-operate or when the respondent has moved away or is not at home.

- (e) Explaining to interviewers the best way to start an interview and how to end it. Starting an interview is not always easy. With a bad start to the interview the respondent may remain suspicious or unhelpful. When this happens the interviewer will not get all the information she wants. Sometimes respondents may deliberately (by intention) give the wrong answers because they do not trust the interviewer.



After lunch Dr. Ashma asks them if they have any questions and quite a lot of time is spent answering these. After a final revision of the most important points he gives each interviewer the name and address of one family **not already interviewed** in the pilot study village. Next day the four interviewers travel by bus to the village; each finds her family and completes the interviewing. They then return to the Health Centre that afternoon, where they compare experiences and study their filled in (completed) questionnaires.



Finally, a short list of the questions asked by the village elders and by respondents during the pilot study interviews is given to the trainees. Each of these questions is discussed and the trainees told the best way of answering these questions.

After a final discussion and question period with Dr. Ashma, the training session ends and they are ready to start on the full survey next week.


STAGE 14

Stage 14 Start the Field Work :

- (i) *Arrange to meet interviewers regularly and often for discussion.*
- (ii) *Check completed questionnaires with the interviewers.*


After training the interviewers the field work can begin. It is very important to meet the interviewers once a day or as often as is possible. During these meetings the following should be done :

- (i) *Discuss with the interviewers any difficulties or unusual situations they have met when interviewing. Interviewers need advice and support and this helps them deal with these situations if they happen again.*
 - Did the interviewers have any special problems ? Were the respondents helpful and willing to talk to the interviewers ?*
- (ii) *Check each of the completed (filled in) questionnaires with the interviewers. In some questionnaires mistakes will have been made, some questions overlooked (not asked) or some other problem has arisen. If these are found soon after the interview, the interviewer will usually remember what happened. In some surveys it will be possible for the interviewer to go back to the family and get the full information.*
 - Can another visit or a call-back be arranged for respondents that were not at home or where difficulties arose during the first interview ? Is this necessary for this survey ?*
 - Has allowance been made that initially (at first) more mistakes are likely and that everything will be done more slowly ?*




The field work arrangements are for one nurse to visit and interview in the villages for one week and then to be 'relieved', i.e. not to do any interviewing, for two weeks. One other nurse will at the same time be interviewing in the two larger villages. For the first three weeks of the survey Dr. Ashma asks each interviewer to come back to the Health Centre in the afternoon when he can discuss with her the experiences and any difficulties she met during that day. He also goes through the filled in (completed) questionnaires with the nurse and finds several omissions which in most cases the nurse can complete from memory.

When the nurse is not sure of the answer, that question is filled in as 'not known'.



During the second week one family has been out working in the fields and the interviewer has only managed to speak to a daughter aged 15 or 16. Dr. Ashma feels this is unreliable information and asks this interviewer to go back to this family the next day; if she again cannot find the mother or an older daughter or grandmother, then she is to speak to neighbours to find out the best day to come back.



During the first few weeks everything takes a little longer because of inexperience. Also Dr. Ashma wants at this early stage to meet each interviewer for discussion. For this reason he decides to cover some of the nearer villages during the first few weeks and so reduce the travelling time. But he makes sure that choosing a few nearby villages fits in with the sampling rules upon which he has decided.

If the planning and preparations have been done carefully, the field work will not give many problems. Unforeseen difficulties such as the flooding of roads, or the illness of the interviewer will sometimes happen. In this case the survey organiser will need to re-arrange the survey time-table to meet these difficulties. But in general the field work will go as planned.

Some interviewers have much more difficulty with respondents and have more refusals to answer questions. It is important to discover these interviewers as soon as possible and replace them by people more suited for this kind of work.

STAGE 15

Stage 15 Abstract the Information :

(a) *Arrange for abstracting the information from the questionnaires.*

(b) *Is local help available for this work ?*

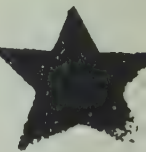
The time to study the results of the survey is when all the interviews have been done and the completed (filled in) questionnaires are collected together and have been properly checked. The survey information is now complete and is contained (held) in the questionnaires. This information is of no use until it is abstracted (taken out of) from these questionnaires and presented in an easily understood way.

Before abstracting any information, two things should be done :

(a) *Arrange the questionnaires neatly and in order. Keep them in good order.*

Questionnaires tend to get mixed up as information is copied from them, i.e. during the abstracting process, and it is necessary to put them back in order before doing further work with these questionnaires.

(b) *Make a short list of the information to be abstracted. Start abstracting the simplest information first.*



One of the first questions Dr. Ashma wants answered is : ‘What is the age and sex structure of the population ? ’. He gets this information by setting out the results in a simple table. First Dr. Ashma takes all the questionnaires and counts the number of persons living in the houses/huts visited during the survey. He does this counting separately for each sex and each age group.

He then presents the data (information) in a simple table as follows :

Table 1

| Age | Males | Females | Totals | Percentage in each age group |
|------------------------------------|-------|---------|--------|------------------------------|
| Under 1 year | 69 | 76 | 145 | 8.3% |
| Between 1 year and puberty | 312 | 334 | 646 | 37.2% |
| Between puberty and under 50 years | 397 | 411 | 808 | 46.4% |
| 50 years and older | 63 | 78 | 141 | 8.1% |
| Totals | 841 | 899 | 1,740 | 100% |

Also start with the most important data, i.e. information that is directly related to the aims of the survey. There are two basic methods (ways) of describing, analysing (drawing conclusions) and presenting this abstracted information.

Both methods must be used. These methods are :

- (a) Summarise and present the information in the form of statistics and tables.*
- (b) Describe in words and text the information presented.*

In the survey report both methods of presenting the information will be used throughout the report; statistics and tables are given in between the text describing the reasons for getting these statistical figures. Also state the conclusions drawn from these results.

For small local surveys no special statistical knowledge or techniques are required for studying the results. There are only four simple statistical procedures that are needed in the majority of small surveys. These are :

- 1. Calculate averages*
- 2. Calculate percentages*
- 3. Calculate some indices such as proportions, ratios and rates where these are needed, e.g. death rates.*
- 4. Display the abstracted data (information) as tables.*

The most important results of a survey are often expressed (written) as statistical tables.

These four statistical procedures will be discussed more fully in the booklet 'Abstracting and Processing Survey Information'.

The help of a local school teacher can be very useful, particularly a teacher of arithmetic. All calculations should be repeated (done again) separately by another person to make sure they are correct. This second person should not be

Before doing any further analysis Dr. Ashma makes the following comments on Table 1.

The survey results show that there is a proper balance between the sexes with a slightly greater number of females as is the case in most communities. The sex ratio of women to men is : $\frac{899}{841} = 1.07$

- (b) The percentage in the different age groups shows that less than half the people are in the most active working age group.

From these survey results it is possible to calculate or estimate of the approximate number of persons by age and sex served by the Health Centre.

For Dr. Ashma one of the main aims of the survey is to obtain evidence that stomach illness and diarrhoea in young children increases during the hot months. It occurs to him that a simple way of seeing seasonal changes in the occurrence of the illness is as follows :

- (i) He sorts (arranges) the 288 questionnaires from the interviews with the mothers into 12 piles according to the month in which the interview took place.
- (ii) For each of these 12 months, he counts from the questionnaires the number of reported cases of stomach illness and diarrhoea in children under one year old during the previous month.
- (iii) He also counts for these families the number of children under one year seen each month.
- (iv) He sets these data (information) out in the form of a statistical table.
- (v) He now makes a second table doing the same for children aged between one year and puberty.

This survey data are now set out as shown in Table 2 and Table 3 :

shown the results of the first person until after he has finished the work; the results can then be compared and checked against each other. If a mistake has been made a school teacher may be the best person to find this mistake and put it right. Very often an interested school teacher can also assist by asking some of his best pupils to help with the abstracting and clerical work. This will need to be very carefully supervised and only the best and older pupils can do this kind of work. Students from the university or an institute of higher education can also give valuable help. It is often possible to arrange for the processing and abstracting of data to be done during the school or university holidays when many pupils and students have the time to assist. Often they will work without payment or only ask for a small sum of money.

In planning a survey it is very easy to overlook some aspects and this only becomes clear towards the end of the study, usually during the abstraction and report writing stages.

There is one simple method that will prevent many of these omissions. Early in the planning stages, a list should be drawn up of :

- (a) the section headings in the final report.*
- (b) the tables and information to be given under each of these sections.*

Making such a list will often remind the planner of items he has forgotten to include in his questionnaires. If this listing is done before the field work begins then these omissions can still be put right.

Table 2

Cases of stomach illness and diarrhoea reported in survey children under 1 year old during the one month before the survey visit

| | June | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Ap | May | Total |
|-----------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-------|
| No. of children seen | 10 | 14 | 12 | 14 | 9 | 14 | 12 | 11 | 13 | 13 | 14 | 9 | 145 |
| No. of cases reported | 0 | 1 | 0 | 2 | 2 | 6 | 6 | 7 | 6 | 3 | 0 | 1 | 34 |

Table 3

Cases of stomach illness and diarrhoea reported in survey children between one year and puberty during one month before the survey visit

| | June | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Ap | May | Total |
|-----------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-------|
| No. of children seen | 56 | 43 | 54 | 59 | 49 | 57 | 55 | 48 | 51 | 60 | 53 | 61 | 646 |
| No. of cases reported | 1 | 1 | 3 | 2 | 6 | 8 | 9 | 11 | 8 | 5 | 1 | 2 | 57 |

Information Extraction

The extraction of information from the survey questionnaires can usually be organised in one of three ways using :

- (i) manual and clerical methods*
- (ii) mechanical machines such as punched card sorters and tabulators*
- (iii) computers*

For small surveys, manual and clerical methods are usually adequate. These clerical methods are cheap, require no special equipment and can be done without highly trained personnel. For these reasons only the clerical methods will be briefly described.

The basis of clerical extraction methods depend on simple 'extraction sheets' which can easily be produced by a typist; they can also be drawn by hand using a pencil and ruler. If available, ruled school exercise essay books are also very suitable for this purpose.

Extraction Sheets

This consists of a horizontally ruled (i.e. lined) sheet of paper with a vertical line about 2 inches (5 centimeters) from one of the edges. Most people prefer this vertical line to be on the left hand side of the sheet but for persons writing a right to left script, the right hand side is more convenient. The horizontal lines should be at least 1/2 inch (1 cm) wide. An example of a completed extraction sheet is shown reduced in size on the next page (figure 1). Enough space should be left at the top of the sheet to write down what the extracted data is, e.g. 'Number of Female Children under One Year per family in LUPO Village'; or 'Number of Visits to Health Centre by families during previous month'.

Several inches (5-10 cm) of space should also be left at the bottom of the sheet for writing down the main results

Dr. Ashma's comments on Tables 2 and 3 are :

- (a) Both tables show a clear increase in stomach illness and diarrhoea during the hot months November to February. Because the question put to the survey mothers was about illness during the previous (past) month, the increase really starts sometime in October and is showing signs of lessening during February.
- (b) Children above one year show signs of developing some resistance or immunity to stomach illness and diarrhoea. This is shown by the relatively fewer cases in the older children. Amongst the under 1 year old children, 34 out of 145 reported some upset during the past month, i.e. about 23%. For the older children this was 57 cases out of 646, i.e. only about 9%.

Another question of importance to Dr. Ashma is whether living far from the Health Centre prevents ill persons from coming to the Centre. How great is the effect of distance ?

For Dr. Ashma this is a particularly interesting question because it combines (brings together) information taken from the Health Centre medical records and information collected during the survey.

To look at the effect of distance it is useful to group villages by the difficulty people have getting to the Health Centre. Dr. Ashma asked during his meeting with the village elders how long it takes a woman walking at her usual speed to get to the main road from which a bus runs to the largest village in which the Health Centre is. Even for the furthest village the bus takes at most two hours. There are three buses a day along the main road, one every three or four hours. The main difficulty is to get from the village to the main road. The reason for asking how long it takes a woman to walk is because Dr. Ashma knows it is the women who usually bring their ill children to the clinic.

Figure 1

A completed extraction sheet

| | | |
|--|-------------|-------|
| No of visits to Health Centre by families in Lupo village during previous month | | |
| Visits | | total |
| None | | 13 |
| One | | 4 |
| Two | | 1 |
| Three | | 0 |
| Four | | 1 |
| | | |
| | | |
| | Grand Total | 19 |
| | | |
| | | |
| Main results; | | |
| i) number of families interviewed | | 19 |
| ii) number of families making at least one visit to the Centre in previous month | | 6 |
| iii) total number of visits in previous month | | 10 |

Table 4

Time it takes a woman to walk to the main road :
only for villages in the survey.

| | less than 1/4 hour | 1/4 < 1 hour | 1 < 2 hrs | 2 < 4 hrs | 4 < 6 hrs | more than 6 hours | Total |
|-----------------------|-----------------------|-----------------|--------------|--------------|--------------|----------------------|-----------------|
| Number of villages | 2 | 4 | 6 | 3 | 3 | 2 | 20 [★] |

★ Including the two largest villages

(The symbol < denotes “less than” the number
to the right of it)

Dr. Ashma next examines the Health Clinic records and counts the total number of patients from these 20 villages seen at the Centre during a whole year. He also estimates (calculates) the number of people living in these groups of villages. This is not a difficult calculation. (The booklet on ‘Abstracting and Processing Survey Information’ gives the method).

and calculations derived from the data on the sheet.

For each variable, i.e. for each item of information or measurement, write in the units in the margin. In figure 1, the items recorded are the number of clinic visits by families during the previous month. The values reported are : 'none' for no visits, one, two or more clinic visits. For other variables, such as weight or height of a child, it is necessary to choose class intervals i.e. a short interval of values; write these intervals in the margin.

For every variable recorded (extracted) a separate extraction sheet is required.

The actual extraction process is done as follows : Each questionnaire contains an 'answer' or a 'value' against each of its questions. As an example consider the question : 'During the past month, how often have you or any one of your family been to the Health Centre because they needed medicine.'

If the first survey questionnaire has the answer 'no visit to Health Centre' then make a short stroke (line) on the extraction sheet in the row that says 'None'. If the next questionnaire records two visits to the Health Centre then a stroke is made on the same extraction sheet in the row that says 'Two'. Continuing in this way it will soon arise that a row has accumulated five entries; the first four strokes are already shown as vertical lines, but the fifth stroke is now made across them.

This makes counting easy as the strokes are now shown together in groups of five on the sheet. Figure 1 shows two of these 'groups of five' in the first row.

This process is continued until the answers to this question from all the survey questionnaires have been marked on the extraction sheet. When this has been done count up the number of strokes in each row and write these totals in the margin of the extraction sheet; also write down the grand total.

This information is displayed by Dr. Ashma as follows :

Table 5

Time it takes a woman to walk to the main road

| | less than 1/4 hour | 1/4 < 1 hour | 1 < 2 hrs | 2 < 4 hrs | 4 < 6 hrs | more than 6 hours | Total |
|---|-----------------------|-----------------|--------------|--------------|--------------|----------------------|-------|
| Calculated total popula- tion in each group of villages | 2450 | 1380 | 790 | 620 | 580 | 650 | 6470 |
| Total no. of persons from these villages who came to the Centre during the previous year | 739 | 346 | 136 | 69 | 45 | 31 | 1366 |
| Percent of cases atten- ding during the previous year | 30% | 25% | 17% | 11% | 8% | 5% | 21% |

(The symbol < denotes "less than" the number to the right of it)

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Dr. Ashma's comments on Table 5 are :

- (a) About 60 per cent of the population, i.e. 3830 out of 6470, live within a one hour walk to the main road from where a bus runs to the Health Centre.
- (b) The percentage of the population attending at the Clinic is six times as great for villages within a 1/4 hour walk than it is for those villages with a walk of more than six hours.

Dr. Ashma thinks this is almost certainly due to the difficulty of getting to the Health Centre for patients living far from the main bus road. He realises however that two other explanations are also possible :

- (a) there is more illness in the villages from which it is easier to get to the Health Centre.
- (b) the villages nearest the Health Centre have more young children and older people (it is these age groups who most often need medical care).

Realising these other possible explanations, Dr. Ashma extracts information from his survey to test whether these explanations are correct.

He does so by :

- (a) sorting the survey questionnaire into groups according to the time it takes a woman to walk to the main bus road. He then counts for each of these groups how many children were reported ill during the month before the visit by the interviewer. He realises that this was not a complete test but it does indicate whether there are some groups of villages with much more illness.
- (b) estimating for each group of villages in Table 5 the age and sex structure by a method similar to that used for Table 1. This immediately shows whether there is any evidence that some village groups have very different age structures.

Analysis of this kind takes Dr. Ashma a long time to complete, even longer than he allowed for. Fortunately, he has not promised his survey report until nine months after finishing the field work and so he has just enough time to keep to his promised schedule.

STAGE 16

Stage 16 Writing and distributing the Survey Report

Writing the Report

Writing the survey report is the last part of the survey. It can be done in many different ways. Most reports divide into several sections, and usually there are at least five separate sections.

1. **Summary** *(short description) of the main results and conclusions of the survey. This should not be more than two or three pages.*
2. **Background** *This section describes the problem and needs that led to the survey being done. At the end of this section clearly state the aims of the survey.*
3. **Methods and Procedures** *This section describes the survey methods used including the sampling plan, the training of interviewers, and any other aspects which affected the way the survey was carried out.*
4. **Results and conclusions** *This section is usually the longest and includes the tables and the information obtained from studying the survey results.*
5. **Acknowledgements** *These can either come at the beginning or at the end of the report. The beginning is often preferable.*

In addition reports should also have :

- (i) **An Appendix** *which contains a copy of all the questionnaires used and a copy of the interviewers' instructions. These are very important to anyone wanting to carry out similar studies in their own community.*
- (ii) **List of References** *of reports and publications of immediate relevance to the survey and the problems with which it is dealing. This list should not be long and should only include those that the author of the survey has himself read and found interesting and useful.*

Dr. Ashma has always insisted on good typing in his Health Centre. A well written and nicely typed letter influences those who receive it to take more notice of what the letter contains. He is even more particular about the appearance of his survey report. Although he does not have enough funds to have it printed he knows that really good typing and proper lay-out can be almost as attractive and is much cheaper.

A few pages of his final report are shown as examples on the next few pages :

Title page :

A HEALTH SURVEY OF SEASONAL DIARRHOEA IN VILLAGE CHILDREN

A study of Exacerbating and Contributing
Factors

by

Dr. H. Ashma
Lumasha Health Centre

A survey report must be clear and easy to read.

Each aspect of problems discussed in the report should be given its own sub-section heading together with the tables relating (connected with) to this aspect.

Good typing and careful lay-out (spacing and position of paragraphs) will greatly help to make the report clear, attractive and easy to read.

Special Reports

The main report fully describes the survey methods, the procedures followed and gives all the results and recommendations. This main report is not always suited for reporting to and informing other persons and authorities.

- (a) other authorities, usually higher health authorities, have their own responsibilities so that only a part of the survey results are of importance to them. They lose interest if required to read reports that are not relevant to their own work.
- (b) other persons, often persons with influence in the community, may lack the medical and educational training to understand the full report. The full report also contains matters such as the survey procedures, which do not interest them very much. To motivate such persons to support the survey recommendations, a report is needed that arouses their interest and is suitable at their level of involvement.

For these reasons two very short, special reports are often written in addition to the main report.

The special report to the higher authorities should contain :

- (i) *a short summary of the reasons for doing the survey and its main results.*

First page of the report

Acknowledgements

Dr. Ashma wishes to thank all those who contributed to the survey and without whose help this study could not have been done. In particular he wishes to record his special thanks to :

- (i) The Health Authorities for their encouragement at all stages and for their substantial contribution towards the cost of the survey.
- (ii) The Regional Water Board for their invaluable help in analysing all the samples of village water. The Board very generously did not charge for their services.
- (iii) The community and its Elders for their co-operation and help.
- (iv) The nurses at the Health Centre who willingly added interviewing to their already very heavy burden of responsibilities and work at the Health Centre.
- (v) The secretary who worked many hours in the evening to prepare the questionnaires and the report.

- (ii) *a little more information about those survey results and recommendations of special interest and relevance to the higher health authorities.*
- (iii) *a reference or indication where a copy of the full report can be obtained if the authorities wish to see it.*

The special report to influential community persons must inform and motivate these persons to support the survey recommendations in the local community. Without strong local support recommended changes will not be accepted. To gain this support from community leaders it is essential that they understand the reasons for the changes and the benefits to the community that will result from introducing (implementing) these changes. For these reasons the community report must be :

- (i) very short and very clear*
- (ii) it must adequately explain the reasons for any proposed changes in terms that can be understood by the community.*
- (iii) the benefits and advantages to the community must be explained. The benefits and advantages must be honestly stated. Difficulties in implementing changes should not be ignored and excessive (exaggerated) benefits must not be claimed.*

Finally, all these reports will reflect the style of the survey planner. His thoughts and his motivation will show. And so it should be. Doing a survey is a creative activity, an activity designed to help the community deal with its many problems.

First page of Summary

A Health Survey of Seasonal Diarrhoea in Village Children

Summary

A survey was carried out in 1980 by the Lumasha Health Centre into the problem of seasonal diarrhoea in the village children within its area. 288 families, selected randomly from 20 villages out of 36, were visited over a full twelve month period. The survey also obtained important demographic data as well as information on environmental factors, especially the conditions of the roads and the water supply that affected attendance at the Health Centre and the general well-being of the community. The evidence suggests strongly that an improved water supply and a public health education program could substantially improve the health of the community but especially the health of young children.

Disseminating the Survey Information

(i) Report to the District Health Authority

Dr. Ashma also intends to write a brief four or five page report for his District Health Authority. This report is to be finished at the same time as his full report so that they can be distributed at the same time. The full report is only to be distributed (sent) to his medical colleagues, to his nurses and to the library of the university at which he studied. Other copies of the full report will be sent to persons who request it and for this purpose he puts aside about 25 copies.

The District Health Authority report will give a very brief summary of the survey, when it was done, why it was undertaken and how many families were visited. Amongst the results only the age and sex distribution will be given in full and the number of diarrhoea cases reported by age and

time of year. Information on road and transport will also be described more fully and a brief description given of how these affect attendance at the Health Centre. Other results will only be referred to very briefly and tables will not be given.

(ii) Report to the Community Elders

A report to community (village) elders is of particular importance if Dr. Ashma is to gain their full and enthusiastic support to introduce necessary health measures. This community report will describe in simple terms the conditions at the wells and what can be done to improve the quality of village water. This report will also describe in simple terms the connection between food storage and food preparation and the health of young children. One of his recommendations is to start health and hygiene classes by his nurses for the village women. Attendance at these classes will only be good if the elders can be persuaded to give their support.

The community report aims to convince community elders of the importance of these classes.

(iii) Visits and Discussions

Not all community leaders are sufficiently literate to read and fully understand the community report. For this reason Dr. Ashma is arranging to visit each village in turn shortly after sending this report to the village elders. During this visit to the elders, he will explain the report, answer questions about it and the survey and try personally to persuade the elders to assist in the work of improving the wells and of supporting the health courses.



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